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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/510,848

10/13/2004

Kiichi Meguro

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EXAMINER

KUNEMUND, ROBERT M

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

11/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/510,848 | Applicant(s) MEGURO ET AL. | |
| | Examiner Robert M. Kunemund | Art Unit 1792 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-13,15-23 and 25-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-13, 15-23, and 25-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 12, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jp 3093695 in view of Takahiro (jp 03-075298).

The Jp 3093695 reference teaches a method of growing and a diamond structure note entire reference. On a substrate, a layer of diamond nucleation sites is prepared. The sites are orientated the same for the vapor growth, note figures. Then a layer of polycrystalline diamond is grown on the nucleation sites. The nucleation sites can be diamond, note abs. The orientation is of the polycrystalline layer. The sole difference between the instant claims and the prior art is nucleation sites being single crystal diamonds placed next to each other. However, the Takahiro reference teaches that large single crystal diamonds can be placed together to create a base for diamond

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growth, note translated abs. It would have been obvious to one of ordinary skill in the art to modify the Jp 3093695 reference by the teachings of the Takahiro reference to use single crystal diamond base in order to ensure that the grown vapor layer of diamond has uniform orientation.

Claims 2, 3, 5 to 11, 15 to 20, 22, 23 and 25 to 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jp 3093695 in view of Takahiro (jp 03-075298).

The Jp 3093695 and Takahiro reference are relied on for the same reasons as stated, supra, and differ from the instant claims in the dimensions of the layers and orientations. However, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to determine through routine experimentation the optimum, operable dimensions and orientations in the combined references in order to create a uniform layer of diamond improving the properties.

Response to Applicants' Arguments

Applicant's arguments filed September 8, 2009 have been fully considered but they are not persuasive.

Applicants' argument concerning the Jp 695 reference is noted. However, the examiner does not see where in the reference the grown polycrystal is considered to be highly oriented. The reference states on page 32 that the diamond is high quality but does have other orientations thus it can be random. The reference teaches that the growth of the diamond is in fact of different orientations. There is a teaching that the undesired orientations are removed but, the other orientations are in fact grown. This

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does teach to one of ordinary skill in the art that random orientation is known in diamond growth.

Applicants' argument concerning random orientations has been considered and not deemed persuasive. It appears that applicants have a set definition of random orientation. However, this definition does not appear to be set forth in the originally filed specification. Thus, it is unclear as to how the different orientations grown in the prior art are not to be considered random. Also, applicants argue that x-ray diffraction should be 7. There is no evidence to show that this number is the one given by the art to polycrystalline diamond layer that is considered randomly orientated. Therefore, the rejection and obvious determination are proper.

Applicants' argument concerning the combination is noted. However, applicants are taking out of context passages in the JP 695 reference to support their position. At no time does the reference teach that one cannot use of single crystal diamond, only they are hard to make or that one with ruin the intended use. It is clear from the secondary reference that diamond single crystal can be used for diamond manufacture. In fact, the closeness of the lattices would aid in growth not deter. Thus, the examiner has supplied ample reasoning to combine references.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Kunemund whose telephone number is 571-272-1464. The examiner can normally be reached on 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on 571-272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert M Kunemund

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Primary Examiner
Art Unit 1792

RMK

/Robert M Kunemund/
Primary Examiner, Art Unit 1792